

CALIFORNIA ENERGY COMMISSION 2012 ACCOMPLISHMENTS

Leading statewide energy policy

■ The California Energy Commission's *2012 Integrated Energy Policy Report (IEPR) Update* provides practical recommendations to address the many complicated energy policy issues facing California. The 2012 IEPR Update includes a renewable energy action plan, a 10-year electricity and natural gas demand forecast, and an analysis of natural gas market outlook and trends.

■ The State's third major assessment on climate change featured more than 20 scientific papers funded by Energy Commission Public Interest Energy Research (PIER) grants. The studies, which describe local and statewide risks and suggest concrete options for action, provided the basis for the California Natural Resources Agency's *California Climate Adaptation Strategy, 2012 Update*.

Improving energy efficiency for California's homes and businesses

■ The Energy Commission's 2013 Building Energy Efficiency Standards will save Californians \$1.6 billion in energy costs over the next 30 years. The standards, adopted in May, are 25 percent more energy efficient than previous standards for residential construction and 30 percent better for nonresidential construction. For a single-family home with a 30-year mortgage, the standards will return more than \$6,200 in energy savings on a homeowner's \$2,300 investment. The standards ensure that better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption are installed in homes and businesses. Since 1975, the Energy Commission's building energy efficiency standards (Title 24) have saved California consumers over \$30 billion.

Adopting first-in-the-nation efficiency standards for battery chargers

■ New energy efficiency standards approved in January will reduce wasted energy by battery chargers commonly used to power cell phones, laptop computers, power tools, and other devices, saving nearly 2,200 gigawatt-hours each year – enough energy to power nearly 350,000 homes or a city roughly the size of Bakersfield. After energy efficient battery charger systems replace older inefficient chargers, the standards will save California ratepayers more than \$300 million annually and eliminate one million metric tons of carbon emissions. Since 1975, the Energy Commission's appliance energy efficiency standards (Title 20) have saved California consumers nearly \$37 billion.

Enforcing appliance standards to save Californians energy and money

■ The Energy Commission validated and published more than 19,000 new certified appliance listings as a part of its program to ensure that all regulated appliances sold in California meet State and federal energy and water efficiency standards. Keeping inefficient and wasteful appliances out of the California market saves California consumers money through reduced energy bills and reduces statewide electricity demand by an estimated 18,000 gigawatt-hours annually.

Addressing California's environmental and energy future through American Recovery and Reinvestment Act (ARRA) funds

Through 2012:

■ The Commission's State Energy Program (SEP) Energy Conservation Assistance Act program made \$20 million in low-interest loans for 33 projects to improve the energy efficiency of public buildings. These projects will save ratepayers \$2.3 million in energy costs each year, reduce annual energy demand by 16,681 megawatt hours and eliminate nearly 5,600 tons of carbon dioxide emissions annually.

■ The Commission's State Energy Program Clean Energy Business Financing Program made \$18 million in loans to four solar panel manufacturing companies, attracting new in-state manufacturing facilities and expanding existing ones while keeping or creating more than 175 California jobs.

■ The Commission Energy Efficiency and Conservation Block Grant Program provided more than \$29 million to 260 small California cities and counties to support energy efficiency retrofits, building upgrades, lighting retrofits, and clean energy systems. These projects will save Californians more than \$4 million in energy costs each year, reduce annual energy demand by nearly 31,000 megawatt hours and eliminate more than 11,500 tons carbon dioxide emissions every year.

■ The Commission's Energy Assurance Planning Initiative provided technical assistance to 23 local jurisdictions to create new emergency preparedness plans and improve existing ones, and to ensure regional electricity grid resiliency.

Transforming vehicle technology

■ The Energy Commission's Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) invested in next generation alternative and renewable fuels, advanced technology low and zero emission cars and trucks, electric vehicle manufacturing, and alternative fueling infrastructure for electric vehicles and hydrogen fuel cell vehicles, to support a strong California manufacturing base, develop a skilled workforce, reduce California's reliance on petroleum-based fuels, improve air quality, and reduce greenhouse gas emissions.

■ The ARFVTP awarded \$147.8 million to 91 projects in 2012. This investment leveraged nearly \$265 million in private and public sector matching funds. Investments included:

- \$90 million to support the development and commercialization of alternative and renewable fuels, alternative fuel infrastructure, and advanced vehicle technologies.
- Nearly \$27 million in new grants for commercial scale biogas, bio/renewable diesel, and first round awards for ethanol produced from woody materials, or cellulosic ethanol. All of these biofuels projects use non-food materials such as agricultural, municipal and food-processing waste, algae and non-food-crop beets, rather than food crops such as corn or soybeans.
- More than \$20 million to assist in the development of approximately 5,200 electric charging stations statewide, supporting the emerging plug-in electric vehicle (PEV) market. The Energy Commission also awarded about \$2 million to help local governments across California plan for more plug-in electric vehicles. These projects help fulfill Governor Brown's Zero Emission Vehicle Executive Order, which set a target of 1 million PEVs by 2020, and 1.5 million PEVs by 2025.
- \$22 million in zero emission, advanced technology truck projects, including electric drive, heavy-duty goods movement trucks, and electric drive shuttles and transit.
- \$10 million to support a California vehicle manufacturing facility expected to create more than 500 new manufacturing jobs in California.
- A demonstration project of battery-powered heavy-duty trucks that can haul loads up to 80,000 pounds and will cut pollution at busy Los Angeles County ports.

- A project to develop an advanced electric motorcycle power train and establish its pilot scale production line.
- Buy-down incentive reservations for approximately 850 alternative and renewable fuel vehicles on California roadways, from school buses fueled by propane to trucks fueled by natural gas.
- An anaerobic digester project in south Sacramento that is the nation's largest facility converting food waste into renewable natural gas and electricity.

Improving reliability by adding new clean generation to the grid

- The Energy Commission oversaw the construction of seven natural gas-fired plants totaling 4,034 megawatts and three solar thermal projects totaling 870 megawatts.
- The Commission licensed three new natural gas-fired power plant projects totaling 943 megawatts.
- The Commission also initiated the licensing process for two solar thermal power plants totaling 1,000 megawatts and four natural gas-fired plants totaling 1,835 megawatts.
- The Commission worked closely with the California Public Utilities Commission, the California Independent System Operator, and others to make sure the San Diego region had a reliable supply of electricity in 2012 despite the loss of over 2,000 megawatts of generation caused by the outage of the San Onofre Nuclear Generating Station.

Generating green jobs and a skilled workforce

- ARFVTP grant recipients reported that the funding they received created more than 5,000 short- and long-term jobs.
- Through 2012, ARRA SEP funding led to the creation of over 4,000 new jobs, as reported to the U.S. Office of Management & Budgets.
- More than 500 contractors and certified raters participated in the Energy Upgrade California program.
- Through 2012, ARRA investments provided job skills training for more than 8,200 unemployed and underemployed Californians, who learned how to perform energy audits, install solar photovoltaic systems, build large-scale renewable power plants, and make Leadership in Energy and Environmental Design certification determinations.

Protecting the desert while developing renewable energy

- The Energy Commission led an unprecedented collaboration of public and private groups working to create the Desert Renewable Energy Conservation Plan (DRECP). Working with the California Department of Fish and Wildlife, the U.S. Bureau of Land Management, and the U.S. Fish and Wildlife Service, the Energy Commission is developing guidelines to identify areas suitable for renewable energy projects and transmission corridors, while developing long-term natural resource conservation areas that protect fragile desert ecosystems.
- In December, State and federal agencies released an interim document called the *Description and Comparative Evaluation of Draft DRECP Alternatives* to allow stakeholders another opportunity to review the plan and provide input before the publication of the Draft Environmental Impact Report/Environmental Impact Statement.

- The Commission signed Memorandums of Understanding with Imperial and San Bernardino counties to form cooperative relationships to effectively plan for and promote renewable energy development in California.

Funding cutting-edge energy research

- The Energy Commission's Research and Development program awarded \$63.7 million to 59 projects designed to improve California's energy system; these awards were matched by more than \$303 million in federal and private funds.
- Automated demand response technologies funded by the Research and Development program saved California ratepayers an estimated \$12 million in electricity costs. Demand response cuts customers' energy bills while protecting grid reliability.
- The Research and Development program funded projects to demonstrate that wireless cooling controls reduce data center cooling costs. The controls saved ratepayers an estimated \$1.7 million on 2012. As data center cooling technologies are optimized and wireless automation spreads, these savings are expected to increase.

Advancing clean energy innovation

- The Energy Commission developed and submitted the Electric Program Investment Charge (EPIC). The \$368.7 million 2012–14 plan promotes the development of next generation clean energy technologies. These investments funds will be directed over the next three years to critical funding gaps in the energy innovation pipeline and will provide California's electricity ratepayers safer, cleaner, more reliable, and less costly electricity.

Establishing a quality specification for light-emitting diode (LED) lamps

■ The Energy Commission developed a voluntary performance specification for LED lamps, to ensure that the lamps will meet consumer expectations. The specification will lead to the production of high-quality lamps that will encourage consumers to switch from the inefficient incandescent lighting of the past century to more cost- and energy-efficient LED lighting technology.

Implementing the aggressive Renewables Portfolio Standard

■ The Renewables Portfolio Standard (RPS) requires California utilities to procure 33 percent of their electricity from renewable energy sources within the next eight years. To support RPS targets, the Energy Commission is required to certify a renewable facility as RPS-eligible before its electricity can be included in meeting a utility's RPS obligations. In 2012, the Energy Commission pre-certified and certified 353 renewable energy facilities for a total of 3,762 megawatts in generating capacity.